# Owner's Manual & Safety Instructions

**Save This Manual** Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference.

CENTRAL MACHINERY®

# 20" PRODUCTION DRILL PRESS

**Visit our website at: http://www.harborfreight.com**
**Email our technical support at: productsupport@harborfreight.com**

**ITEM 39955**

REV 14j

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-888-866-5797 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.
Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein.
Tools required for assembly and service may not be included.

## ⚠WARNING

**Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.**

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| WARNING SYMBOLS AND DEFINITIONS | |
|---|---|
| ⚠ | This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death. |
| ⚠DANGER | Indicates a hazardous situation which, if not avoided, will result in death or serious injury. |
| ⚠WARNING | Indicates a hazardous situation which, if not avoided, could result in death or serious injury. |
| ⚠CAUTION | Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. |
| *NOTICE* CAUTION | Addresses practices not related to personal injury. |

# IMPORTANT SAFETY INFORMATION

## General Tool Safety Warnings

### ⚠WARNING

**Read all safety warnings and instructions.**
*Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.*
**Save all warnings and instructions for future reference.**

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.

# General Tool Safety Warnings (cont.)

7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.

8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.

**Table A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)**

| NAMEPLATE AMPERES (at full load) | EXTENSION CORD LENGTH | | | |
|---|---|---|---|---|
| | 25′ | 50′ | 100′ | 150′ |
| 0 – 6 | 18 | 16 | 16 | 14 |
| 6.1 – 10 | 18 | 16 | 14 | 12 |
| 10.1 – 12 | 16 | 16 | 14 | 12 |
| 12.1 – 16 | 14 | 12 | **Do not use.** | |

9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

10. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

11. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.

12. SECURE WORK. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.

13. DON'T OVERREACH. Keep proper footing and balance at all times.

14. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

15. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.

16. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.

17. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.

18. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.

19. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

20. DIRECTION OF FEED. Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.

21. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

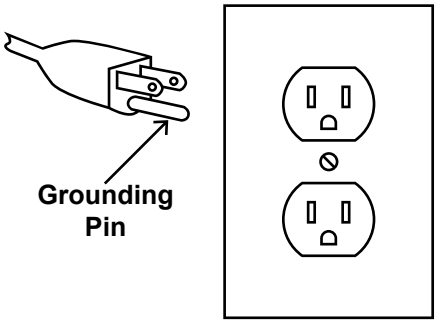
## Grounding Instructions

**⚠WARNING**

**TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION**
**READ AND FOLLOW THESE INSTRUCTIONS:**

# 110-120 VAC Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.




**125 VAC 3-Prong Plug and Outlet**
**(for up to 125 VAC and up to 15 A)**

7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 VAC 3-Prong Plug and Outlet**. The tool has a grounding plug that looks like the plug illustrated above in **125 VAC 3-Prong Plug and Outlet**.
8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
9. Do not use an adapter to connect this tool to a different outlet.

# Drill Press Safety Warnings

**For Your Own Safety Read Instruction Manual Before Operating Drill Press**

1. Wear eye protection.
2. Do not wear gloves, necktie, or loose clothing.
3. Clamp workpiece or brace against column to prevent rotation.
4. Use recommended speed for drill accessory and workpiece material.
5. The included chuck key is specially designed to be self-ejecting, reducing the risk of ejecting at high speed. Only use the included chuck key or an identical replacement key.
6. **DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED. Moving guards must move freely and close instantly.**
7. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
8. When servicing use only identical replacement parts.
9. Do not depress the spindle lock when starting or during operation.
10. Only use safety equipment that has been approved by an appropriate standards agency. Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.

## Drill Press Safety Warnings (cont.)

11. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.

12. Industrial applications must follow OSHA guidelines.

13. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

14. Avoid unintentional starting. Prepare to begin work before turning on the tool.

15. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.

16. WARNING: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Some examples of these chemicals are:
    - Lead from lead-based paints
    - Crystalline silica from bricks and cement or other masonry products
    - Arsenic and chromium from chemically treated lumber

    Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)

17. WARNING: The cord of this product contains lead and/or di (2-ethylhexyl) phthalate (DEHP), chemicals known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling. (California Health & Safety Code § 25249.5, *et seq.*)

18. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

## Vibration Safety

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.

2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.

3. Use tools with the lowest vibration when there is a choice between different processes.

4. Include vibration-free periods each day of work.

5. Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.

6. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

**SAVE THESE INSTRUCTIONS.**

## Specifications

| | |
|---|---|
| Electrical Rating | 120VAC / 60Hz / 13.5A |
| Spindle No Load Speeds | 180, 310, 320, 500, 540, 570, 1180, 1565, 1805, 2190, 2795, 3865 RPM |
| Spindle Stroke | 4-3/4" |
| Spindle | MT3 |
| Swing | 20″ |
| Column Diameter | 3-5/8″ |
| Chuck Capacity | 5mm to 20mm (.197″ to .787″) JT3 Taper |
| Max. Spindle to Base | 45-1/4″ |
| Spindle to Table | 26-1/8″ |
| Table | 18-3/4″ x 16-3/4″ |
| Wet Table | With Oiler |
| Table Slot | 1″ x 1/2″ |

UL LISTED 86PJ E105017

## Setup - Before Use:

**Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.**

## ⚠WARNING

**TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:**
**Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.**

**Note:** For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

# Mounting

Secure the tool to a supporting structure before use. Before assembly, bolt the Base to a flat, level, solid floor location capable of supporting the weight of the drill press and any workpieces.

Verify that installation surface has no hidden utility lines before drilling or driving screws.

# Assembly

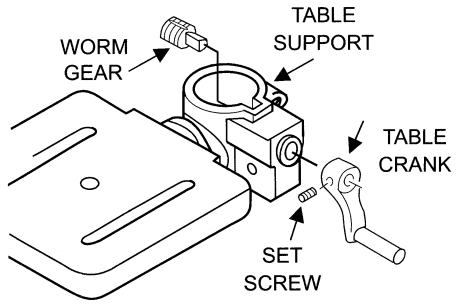
### Column Assembly to Base

1. With the Base (10B) on a flat level surface, bolt on the Column Support (3B) using the four M12 Hex Head Screws (9B). Tighten Firmly.
2. Insert the Column (11B) into its support and firmly secure this assembly in place with the Hex Socket set Screws (7B). It may be necessary to unscrew the Hex Socket Screws (7B) slightly to ensure that they do not protrude internally, as this will prevent the Column from sliding fully into position in the Tube.

## Table to Column

1. Locate the Elevation Worm Gear (19B), the Crank Handle (5B) and the Table Crank (4B). Insert the Worm Gear Shaft into the Table Support and extend the Shaft through the opening as far as possible.

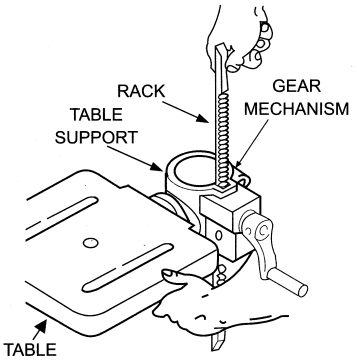
2. Locate the Table Crank (4B). The Crank is to be installed on the Elevation Worm Gear Shaft (19B). A Set Screw (7B) is to be aligned with the flat portion of the Shaft. Get the Crank as close as possible to the Support, and then tighten the Set Screw.




3. Screw the Crank handle into the Table Crank. Use an adjustable wrench to tighten the Crank Handle securely.

4. Loosen the Set Screw (2B) in the Column Collar (1B) with the Hex wrench and remove the Collar and Rack from the Column.

5. Locate the Rack (6B) and with the smooth end of the Rack pointing upward, slide it down through the large, round opening in the Table Support (3B). Engage the Rack into the Gear Mechanism found on the inside opening of the Table Support.




6. While holding the Rack and the Table Support as assembled, slide both down over the Column. Slide the Rack down until the Rack is positioned against the lower Column Support.

7. Replace the Collar (1B), with the bevel side down, which was removed in Step 4. Tighten it with the Hex wrench used in Step 4.

**Note:** In order for the Rack to slide when the Table is swung to the left or right on the Column, the Collar must sit loosely over the Rack. Only tighten the Set Screw enough to keep the Collar in place. Over tightening the Set Screw may result in breaking of the Collar.

8. Check the Column Collar for proper adjustment. The Collar should sit evenly on the Column and the Rack should slide freely when the Table is rotated 360º.

9. Locate the Column Clamp (17B) and insert it into the Table Support. Once inserted, tighten it by hand. Once this is done, rotate the Worm clockwise with the Crank. If necessary, loosen the Set Screw in the Crank and reposition the Crank as close to the Table Support as possible. Tighten the Set Screw.

10. Check the “gap”, i.e., the clearance between the Table Crank and the Table Support. If the gap is larger than 1/32″, crank backlash will be minimized.

## Head to Column

1. With assistance, slide the Head (45A) onto the Column as shown in the Assembly Diagram. It may be necessary to unscrew the Head Lock Set Screws (15A) slightly to ensure that they do not protrude internally, as this will prevent the head from sliding fully into position.

2. Align the Head with the Base (10B) and firmly secure it into position with the Set Screws.

3. Screw the three Rods (19A) firmly into the Hub (20A).

## Chuck

1. Loosely slide the Chuck onto the Spindle. Make certain that the teeth of the Chuck are not exposed.

2. Put a piece of scrap wood on the table to protect the Chuck nose.

3. Pull the Spindle down using the Handle. Press the Chuck nose hard against the scrap wood on the table until the Chuck is forced into a solid fit. The Chuck is pressure fitted.

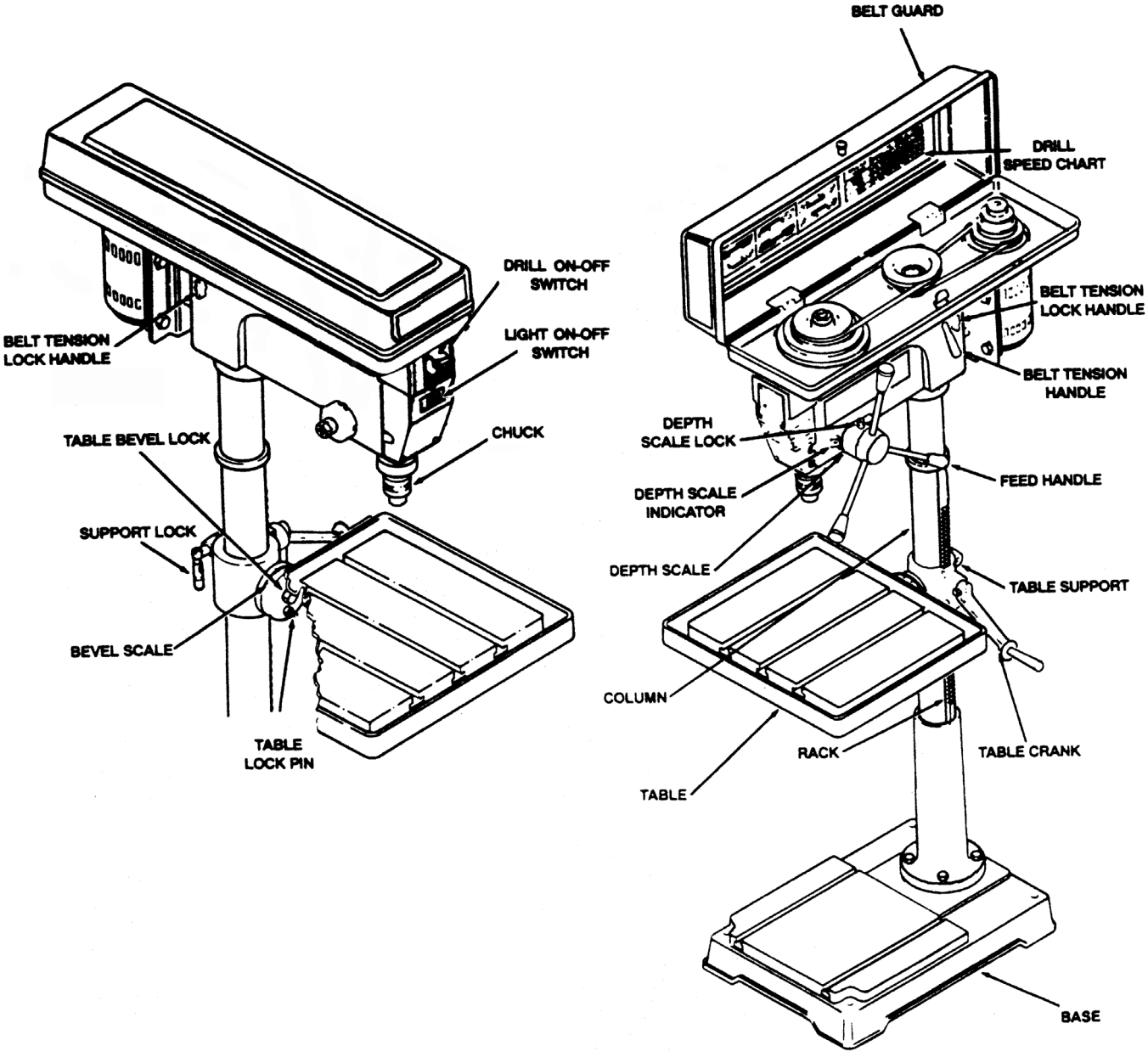
### Pulley Cover Knob

1. Locate the Knob (21) and the pan head screw (7).
2. Slide the Knob into the hole in the front of the Pulley Cover.
3. Twist the screw into the knob from the underside of the Pulley Cover.
4. Screw on tightly.

### Oiler System

1. Use four M5x0.8-8 Screws (51A) to fasten the two Oil Brackets (50A).
2. Insert the Oil Bottle with Spigot Assembly (52A, 53A) into the Oil Brackets.

## Features



**Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.**

# Tool Set Up

## ⚠WARNING

**TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:**
**Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.**

**TO PREVENT SERIOUS INJURY:**
**DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED.**
**Moving guards must move freely and close instantly.**

### Table Adjustment

The table rotates 360º and tilts 45º right and left. The table is capable of being raised, lowered and swiveled about the column.

1. Raise or lower the Table by slackening off the Arm Locking Handle and turning the crank clockwise to raise it and counterclockwise to lower it.
2. The Table can be swiveled about the Column by loosening the Arm Locking Handle. The Table assembly and Rack move as one around the Table.
3. You can tilt the Table by loosening the Bevel Table Locking Screw (12B and 14B) and tilting the Table to the desired angle.
4. The Table is fitted with an Angle Scale to determine the degree of slant. For all normal operations the Table should be set at 0º. To ensure that the drill is entirely perpendicular to the table, insert a piece of straight round bar in the chuck, place a Square on the Table and bring it up to the round bar. Adjust the Table tilt if necessary so that the Table is correctly aligned.

### Setting the Drilling Depth

Located near the Spindle Feed Shaft is a Depth Stop Collar (A) which contains a graduated scale. The collar is capable of turning around the Shaft, and may be locked in place by a Locking Screw (B). Depth is measured in both inches and metric.

1. With power OFF, lower the Chuck until the drill contacts the surface of the workpiece. Hold it in that position.
2. Loosen the Locking Screw and turn the collar so that the measurement for the depth of the hole required is in line with the Pointer (C).
3. Lock the Collar in position using the Locking Screw.

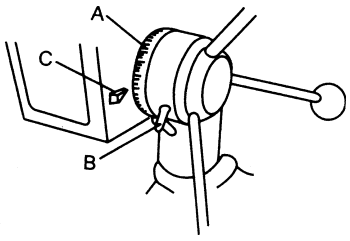



**Figure A: Depth Setting**

The Drill is now set to drill holes to your predetermined depth from that particular starting point.

## Changing Drill Speed

The Drill Press has twelve different speeds:
180 RPM, 310 RPM, 320 RPM, 500 RPM,
540 RPM, 570 RPM, 1180 RPM, 1565 RPM,
1805 RPM, 2190 RPM, 2795 RPM, and 3865 RPM

A full chart of belt arrangements for each drill speed is located on the inside of the Pulley Cover.

1. Undo the Belt Tension Lock Knobs on both sides of the head.
2. Turn the Belt Tension Handle (14A) clockwise to bring the Motor Pulley close to the Spindle Pulley which will allow the belts to be moved easily.
3. Lubricate the Idler Pivot Shaft (4) and the Pulley Idler with light grease, and install it in its mounting place between the motor and spindle pulleys.
4. To change the speed of the Drill, you will need to move the belt to the appropriate place on each pulley. Hold the Lifting knob (21) and lift up on the Pulley Cover (13). Manually move the belt into the appropriate grooves on the pulleys which correspond to the speed desired. Consult the chart inside the pulley cover and position the belts on the pulleys according to the drill speed required.

**Note:** Factors which determine the best speed to use in the drill press operation are:

a. Type of material to be drilled
b. Size of hole
c. Type of drill bit
d. Quality of the hole or cut desired.

Generally, the SMALLER THE DRILL BIT the GREATER THE REQUIRED RPM. In soft material, the speed should be higher than for hard metals. As a guide, the drill speed for a given drill bit size is listed in the chart at the bottom.

5. Turn the Belt Tension Lever counterclockwise so that tension is applied to the belts. Tension is correct when the belts deflect by approximately 1/2” at their centers of run when using reasonable thumb pressure. Lock the motor in this position with the Locking Knob.

**Note:** If the belt is too long to be properly tensioned, it must be replaced.

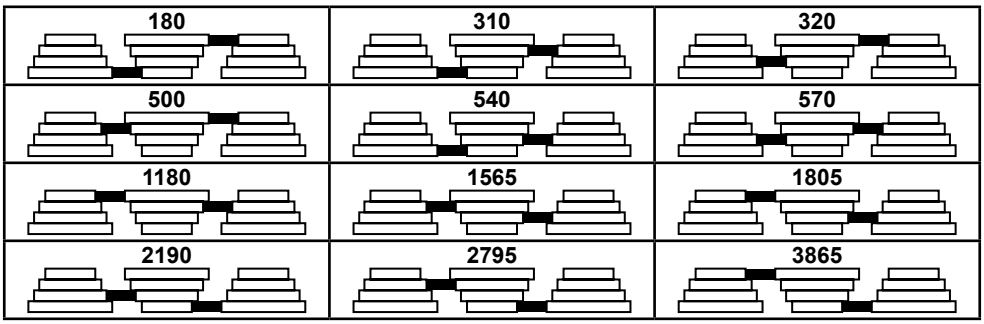



**Figure B: Belt Speed Settings**

## Bit Installation

1. Insert the bit into the jaws of the chuck approximately 1″, ensuring that the jaws do not touch the flutes of the drill.
2. Ensure that the bit is centered within the jaws, then use the supplied chuck key to firmly tighten the chuck.

## Workpiece and Work Area Set Up

1. Designate a work area that is clean and well-lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.
3. Secure loose workpieces using a vise or clamps (not included) to prevent movement while working.
4. There must not be objects, such as utility lines, nearby that will present a hazard while working.
5. Make sure the table height and position is set so that the drill travel range is sufficient for the material to be drilled.
6. Make sure the work is securely clamped. That is, held in a drill vise, or bolted to the table. Never hold the material with your bare hands while drilling. Severe personal injury may be caused if the material is flung out of the operator's hand.
7. IF THE MATERIAL IS IRREGULARLY SHAPED and cannot be laid flat on the table, it should be securely blocked and clamped. Any tilting, twisting or shifting will result not only in a roughly drilled hole but also increases the chances of damage to the drill.
8. FOR FLAT WORK, lay the piece on to a wooden base and clamp it down firmly against the table to prevent it from turning.
9. FOR SMALL MATERIALS that cannot be clamped to the table, use a drill press vise. Make sure the vise is clamped or bolted to the table.
10. WHEN DRILLING COMPLETELY THROUGH WOOD, always position a piece of scrap wood between the material and the table to prevent splintering on the underside of the material as the drill breaks through. The scrap piece of wood must make contact with the left side of the column. Securely clamp the other end of the scrap wood to the table. Also, set the depth of the drill so that the drill will not come in contact with the table - or align the table so that the hole in its center is in line with the drill bit.

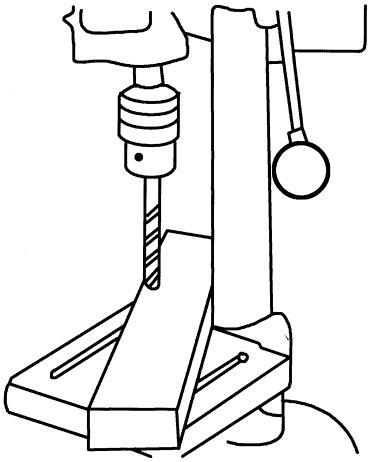


**Figure C: Bracing workpiece against column**

## General Operating Instructions

1. Bring the drill bit down with the Feed Knob to where the hole is to be drilled. Make minor workpiece alignment adjustments.
2. Plug the Power Cord into an electrical outlet.
3. Turn the Drill Press on.
4. Pull down on the Feed Knob and slowly drill the hole into the workpiece.

**WARNING!** If the drill bit grabs and spins the workpiece, do not attempt to stop the spinning with your hands. Step back, and turn the drill press off. Wait for the spindle to stop turning before dislodging the workpiece.

5. To prevent accidents, turn off the tool and disconnect its power supply after use. Clean, then store the tool indoors out of children's reach.

**Procedures not specifically explained in this manual must be performed only by a qualified technician.**

## ⚠WARNING

**TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:**
**Turn the Power Switch of the tool off and unplug the tool from its electrical outlet before performing any procedure in this section.**

**TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:**
**Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.**

# Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the tool. Check for:
   - loose hardware,
   - misalignment or binding of moving parts,
   - cracked or broken parts,
   - damaged electrical wiring, and
   - any other condition that may affect its safe operation.
2. **AFTER USE,** wipe external surfaces of the tool with clean cloth.
3. **⚠WARNING! If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**

# Belt Inspection and Tensioning

1. Examine belt for cracks, tears in the backing, and other damage.
2. Replace belt if damaged, following the instructions under Changing Drill Speed on page 10.

# Troubleshooting

| Problem | Possible Causes | Likely Solutions |
|---|---|---|
| Tool will not start. | 1. Cord not connected. | 1. Check that cord is plugged in. |
| | 2. No power at outlet. | 2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads. |
| | 3. Tool's thermal reset breaker tripped (if equipped). | 3. Turn off tool and allow to cool. Press reset button on tool. |
| | 4. Internal damage or wear. (Carbon brushes or switch, for example.) | 4. Have technician service tool. |
| Tool operates slowly. | Extension cord too long or wire size too small. | Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See **Table A** on page 3. |
| Performance decreases over time. | 1. Accessory dull or damaged. | 1. Keep cutting accessories sharp. Replace as needed. |
| | 2. Carbon brushes worn or damaged. | 2. Have qualified technician replace brushes. |
| Excessive noise or rattling. | 1. Internal damage or wear. (Carbon brushes or bearings, for example.) | 1. Have technician service tool. |
| | 2. Belt (if equipped) too loose (slipping) or too tight (bearing damage). | 2. Properly tension belt. |
| Overheating. | 1. Forcing machine to work too fast. | 1. Allow machine to work at its own rate. |
| | 2. Accessory dull or damaged. | 2. Keep cutting accessories sharp. Replace as needed. |
| | 3. Blocked motor housing vents. | 3. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air. |
| | 4. Motor being strained by long or small diameter extension cord. | 4. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See **Table A** on page 3. |

**Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.**

# PLEASE READ THE FOLLOWING CAREFULLY

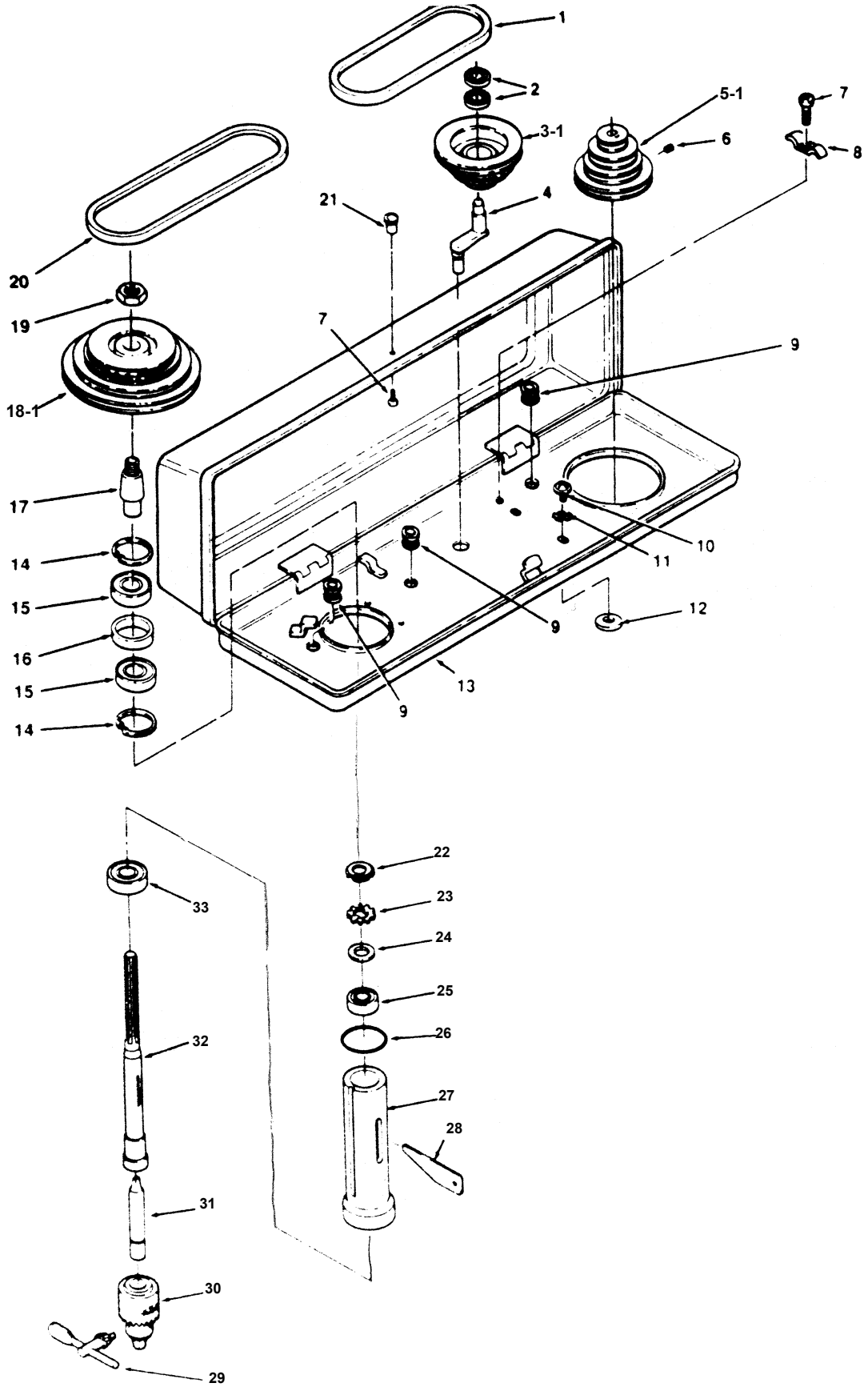
THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

## Pulley and Spindle Parts List

| Part | Description | Qty |
|---|---|---|
| 1 | Belt - “V” 1/2 x 29 | 1 |
| 2 | Ball Bearing | 1 |
| 3-1 | Center Pulley | 1 |
| 4 | Pivot Idler | 1 |
| 5-1 | Motor Pulley | 1 |
| 6 | Screw-Set M8 x 1.25 | 1 |
| 7 | Pan Head Screw M5 | 1 |
| 8 | Cord Clamp | 1 |
| 9 | Rubber Bushing | 1 |
| 10 | Screw-M6 | 1 |
| 11 | Lock Washer | 1 |
| 12 | Foam Washer | 1 |
| 13 | Pulley Cover | 1 |
| 14 | Retaining Ring | 1 |
| 15 | Ball Bearing | 1 |
| 16 | Bearing Spacer | 1 |
| 17 | Insert-Pulley | 1 |

| Part | Description | Qty |
|---|---|---|
| 18-1 | Spindle Pulley | 1 |
| 19 | Nut-Pulley | 1 |
| 20 | Belt - “V” | 1 |
| 21 | Knob | 1 |
| 22 | Lock Nut | 1 |
| 23 | Ring-Locking | 1 |
| 24 | Washer | 1 |
| 25 | Ball Bearing 20mm | 1 |
| 26 | Rubber Washer | 1 |
| 27 | Tube-Quill | 1 |
| 28 | Key-drift | 1 |
| 29 | Chuck Key | 1 |
| 30 | Chuck | 1 |
| 31 | Arbor | 1 |
| 32 | Spindle | 1 |
| 33 | Ball Bearing- 30mm | 1 |

# Pulley and Spindle Assembly Diagram




**Record Product's Serial Number Here:**_____

**Note:** If product has no serial number, record month and year of purchase instead.

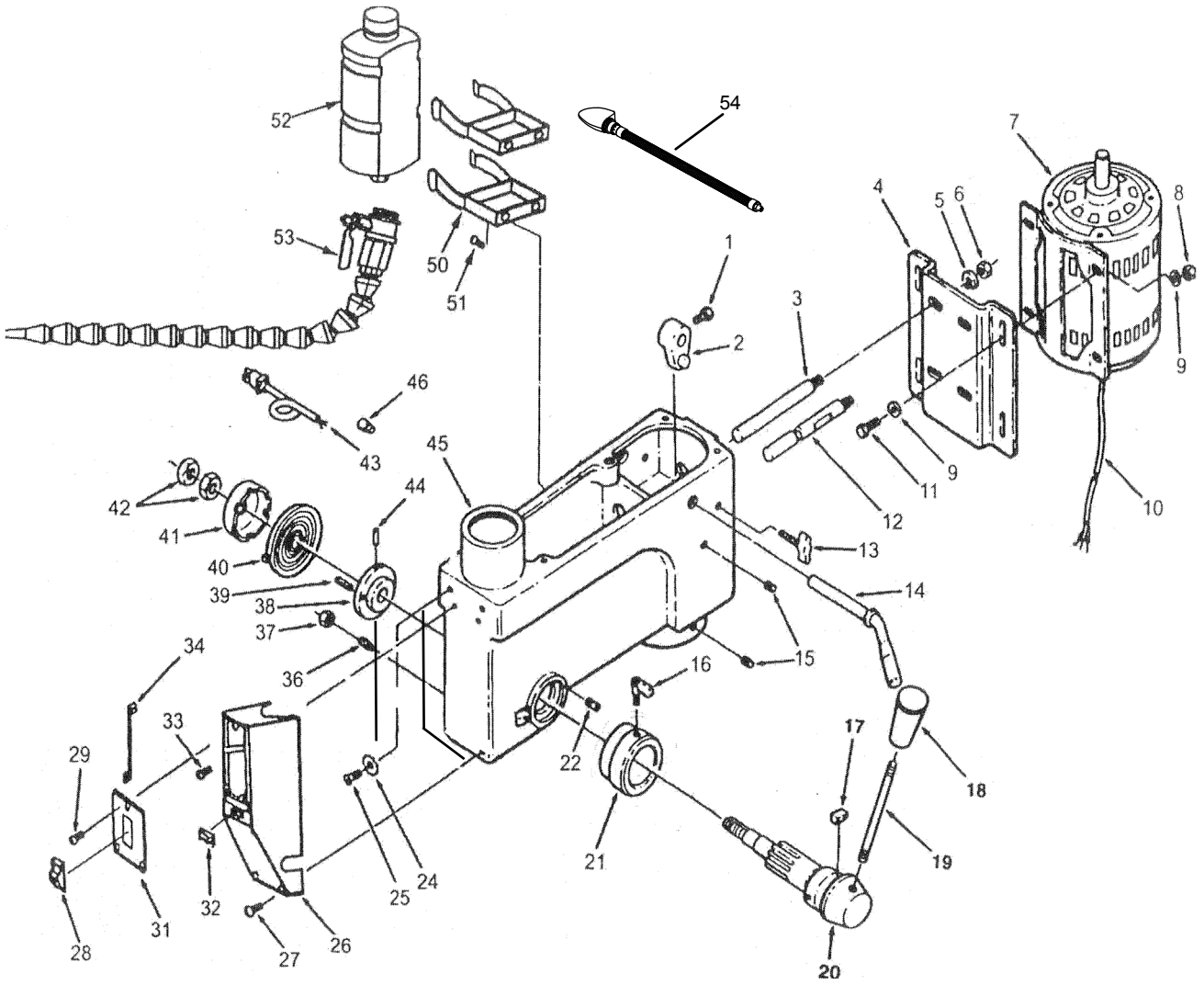
**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

# Parts List and Diagram A - Head

**Note:** All part numbers shown in this diagram have an “A” suffix

| Part | Description | Qty |
|---|---|---|
| 1A | Screw-Hex Head M8 . | 1 |
| 2A | Adjusting Lever | 1 |
| 3A | Motor Bracket Support | 1 |
| 4A | Motor Mount | 1 |
| 5A | Lock Washer 12mm | 1 |
| 6A | Hex-Nut M12 x 1.25 | 1 |
| 7A | Motor | 1 |
| 8A | Hex-Nut M8 | 1 |
| 9A | Washer | 1 |
| 10A | Cord - Motor | 1 |
| 11A | Hex Head Screw M8 | 1 |
| 12A | Motor Bracket Support | 1 |
| 13A | Motor Adjusting Knob | 1 |
| 14A | Belt Tension Handle | 1 |
| 15A | Screw-Soc Set M10 | 1 |
| 16A | Lock Depth Screw | 1 |
| 17A | Guide-Scale | 1 |
| 18A | Knob | 1 |
| 19A | Rod | 1 |
| 20A | Hub | 1 |
| 21A | Ring/Depth Stop w/Scale | 1 |
| 22A | Stop-Pin | 1 |
| 24A | Lock Washer | 1 |
| 25A | Screw | 1 |

| Part | Description | Qty |
|---|---|---|
| 26A | Switch Box | 1 |
| 27A | Screw-Pan Cr. M5 | 1 |
| 28A | Locking Switch | 1 |
| 29A | Pan Head Screw | 1 |
| 31A | Cover Switch Plate | 1 |
| 32A | Rocker Switch | 1 |
| 33A | Screw-Pan Cr. M6 | 1 |
| 34A | Lead-3 “ | 1 |
| 36A | Screw-Special Set | 1 |
| 37A | Hex Nut | 1 |
| 38A | Spring-Seat | 1 |
| 39A | Pin-Roll 2.5 -10 | 1 |
| 40A | Spring-Torsion | 1 |
| 41A | Spring-Cap | 1 |
| 42A | Hex-Nut M12 x 1.5-8 | 1 |
| 43A | Cord - Power | 1 |
| 44A | Pin-roll | 1 |
| 45A | Head w/Pointer and Trim | 1 |
| 46A | Connector Wire | 1 |
| 50A | Oil Bracket | 2 |
| 51A | Screws 5mmx8mm | 4 |
| 52A | Oil Bottle | 1 |
| 53A | Spigot Assembly | 1 |
| 54A | LED Lamp | 1 |

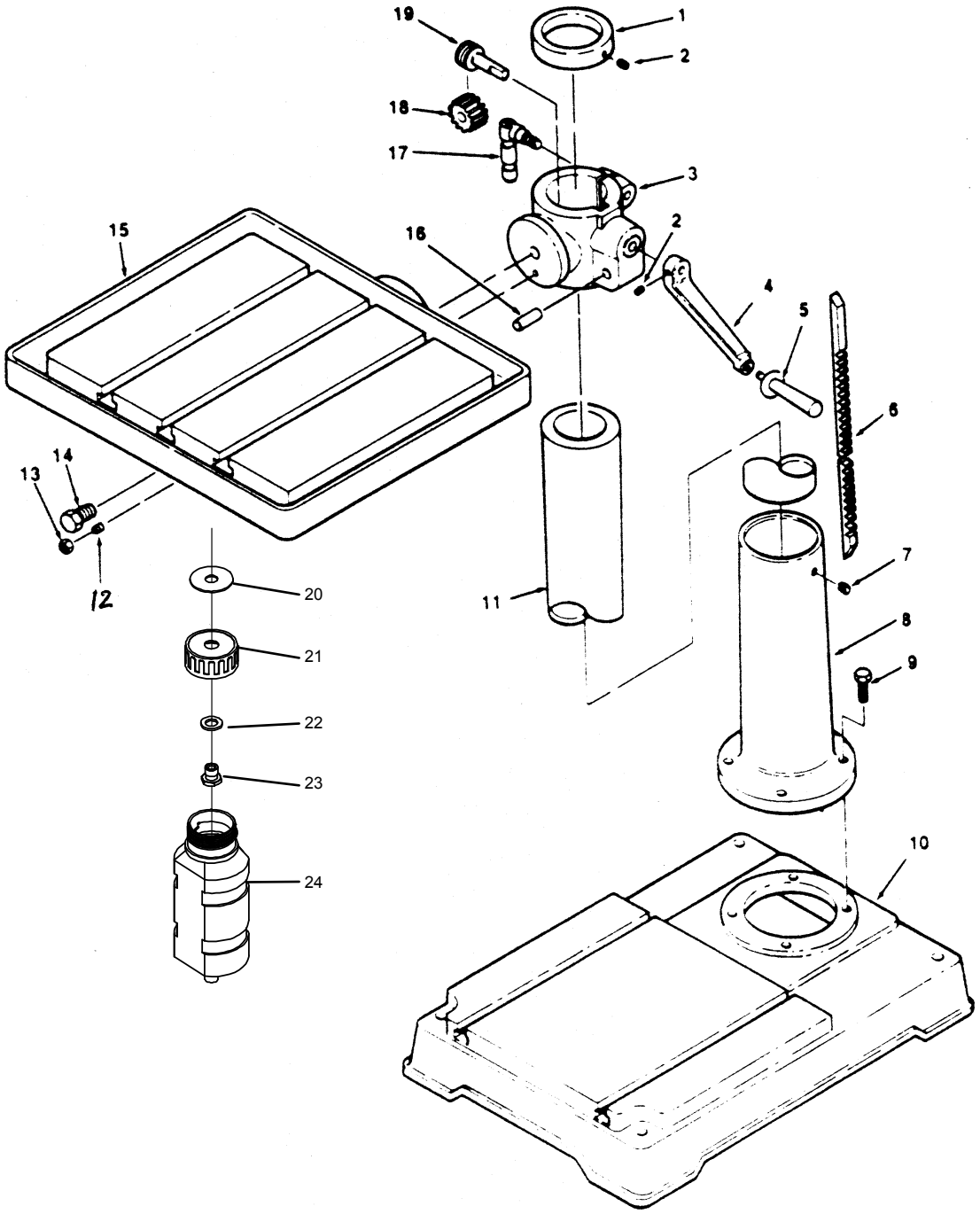


# Parts List and Diagram B - Base and Table

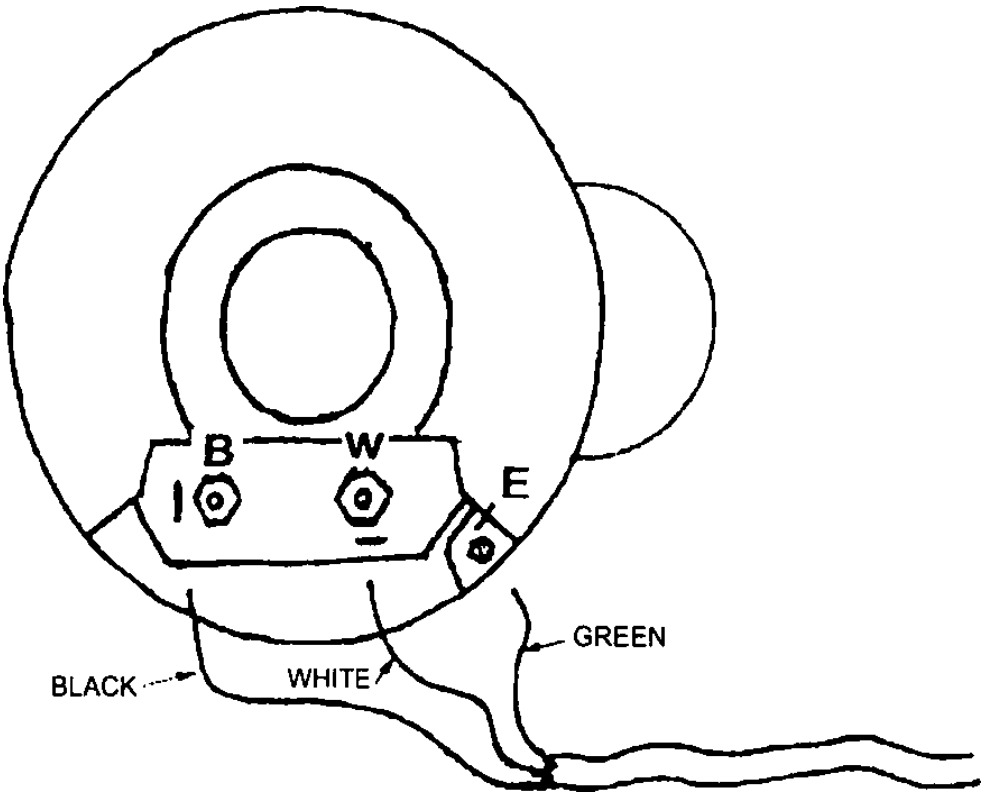
**Note:** All part numbers shown in this diagram have an “B” suffix

| Part | Description | Qty |
|---|---|---|
| 1B | Collar-Rack | 1 |
| 2B | Screw-Hex Soc Set | 1 |
| 3B | Table Support w/Indicator | 1 |
| 4B | Crank | 1 |
| 5B | Crank Handle | 1 |
| 6B | Rack | 3 |
| 7B | Screw-hex Soc Set | 1 |
| 8B | Column Support | 1 |
| 9B | Screw | 1 |
| 10B | Base | 2 |
| 11B | Column-Tube | 1 |
| 12B | Table Lock Pin | 1 |

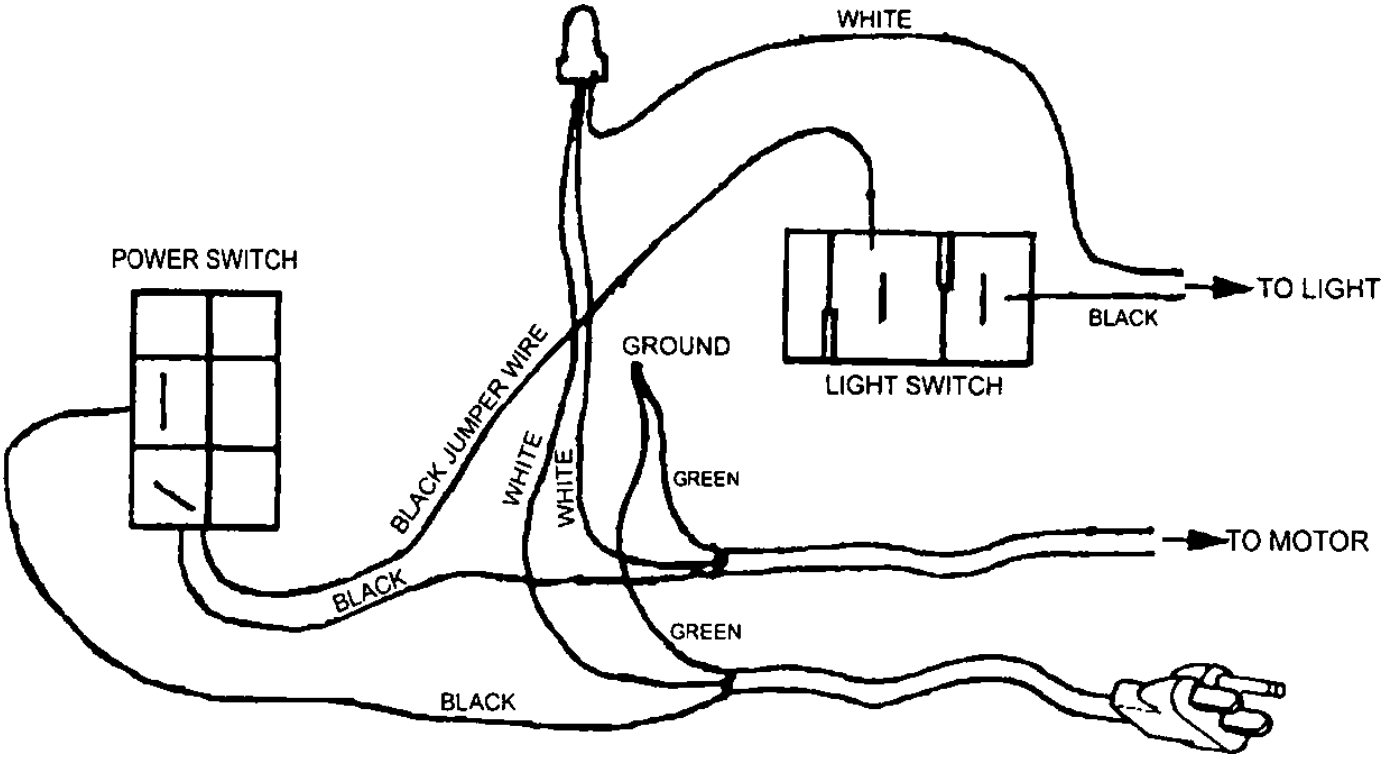
| Part | Description | Qty |
|---|---|---|
| 13B | Nut-hex M8 | 1 |
| 14B | Hex Head Screw | 1 |
| 15B | Table w/Scale | 1 |
| 16B | Pin - Gear | 1 |
| 17B | Column Clamp | 1 |
| 18B | Helical Gear | 1 |
| 19B | Worm Gear | 1 |
| 20B | Sealing Gasket (B) | 1 |
| 21B | Oil Bottle Top | 1 |
| 22B | Sealing Gasket (A) | 1 |
| 23B | Hollow Connecting Bolt | 1 |
| 24B | Oil Bottle | 1 |



## Motor Wiring Diagram



## Power and Light Switch Wiring Diagram



## Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

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This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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